Identifying Errors Challenge

Answer Key

Students' answers will vary. Open up discussion, highlighting the following areas of importance.

Identifying and addressing these errors would make the experiment more reliable and scientifically rigorous.

1. Lack of Control: While the experiment aims to test the effect of different water amounts, it doesn't control other variables like sunlight, soil type, or temperature. Without controlling these factors, it's challenging to attribute any observed differences in plant growth solely to the water amounts.

2. Lack of Replication: Ideally, each condition (no water, small amount, excessive water) should be replicated multiple times to ensure the results are consistent. Using just one plant for each condition may not provide reliable data.

3. Inconsistent Measurements: The experiment mentions "small amount" and "excessive water" without specifying exact measurements. This lack of precision makes it difficult to replicate the experiment or compare the results accurately.

4. No Time Frame: The experiment doesn't specify the duration of the study. Different watering amounts might affect plant growth differently over time, so it's important to mention the study's timeframe.